



National Institute on Alcohol Abuse and Alcoholism

National Institute on Alcohol Abuse and Alcoholism
Division of Biometry and Epidemiology
Alcohol Epidemiologic Data System

SURVEILLANCE REPORT #38

TRENDS IN ALCOHOL-RELATED FATAL TRAFFIC CRASHES, UNITED STATES, 1977-94

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December 1996

U.S. Department of Health and Human Services
Public Health Service
National Institutes of Health

CSR, Incorporated, operates the Alcohol Epidemiologic Data System (AEDS) under Contract No. N01-AA-5-1001 for the Division of Biometry and Epidemiology, National Institute on Alcohol Abuse and Alcoholism

HIGHLIGHTS

This is the 11th annual surveillance report from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) on trends in alcohol-related fatal traffic crashes. Data in this report were compiled from sources provided by the National Highway Traffic Safety Administration (NHTSA), the Federal Highway Administration (FHA), and the U.S. Bureau of the Census. The following are highlights of trends in alcohol-related fatal traffic crashes for the 18-year period from 1977 through 1994:

General Trends and Fatality Rates

- In 1994 the proportion of traffic crash fatalities that were alcohol related reached an 18-year low of 33.6 percent.
- The number of alcohol-related traffic crash fatalities decreased from 1993 to 1994, although total traffic crash fatalities increased.
- From 1977 to 1994, alcohol-related traffic crash fatalities per 100 million vehicle miles traveled, 100,000 population, 100,000 registered vehicles, and 100,000 licensed drivers decreased 56, 35, 41, and 42 percent, respectively.
- The number of years of potential life lost (YPLL) attributable to alcohol-related traffic crashes declined 28 percent for males and 23 percent for females over the 18-year period.
- From 1977 to 1994, the number of male drivers involved in alcohol-related fatal traffic crashes decreased 25 percent; for females there was a 12-percent increase.

Blood Alcohol Concentration (BAC) Testing and Results

- In 1994 the national rate of BAC testing of drivers killed in traffic crashes was 72 percent, up from 42 percent in 1977.
- The mean BAC of drivers with positive BAC results who were involved in fatal traffic crashes remained fairly constant across the 18-year period (0.16 or 0.17 grams per deciliter (g/dl) percent).

Young Drinking Drivers

- Deaths associated with young drinking drivers (i.e., ages 16 to 24) decreased 47 percent from 1977 to 1994.
- The number of young drinking drivers killed in traffic crashes decreased 43 percent from 1977 to 1994.

INTRODUCTION

This surveillance report on alcohol-related¹ fatal traffic crashes is one in a series of surveillance reports designed to provide useful data to researchers, planners, policymakers, and other professionals interested in alcohol abuse and its associated illnesses and mortality. It is hoped that these documents, prepared by NIAAA's Alcohol Epidemiologic Data System (AEDS), will serve as a useful reference for workers in the alcohol field.

Other surveillance report topics include apparent per capita consumption of alcoholic beverages, discharges of hospital patients with alcohol-related conditions, and liver cirrhosis mortality. This 11th annual surveillance report on trends in alcohol-related fatal traffic crashes updates previous surveillance reports.

The category of "injuries and adverse effects" was the leading cause of death for persons in the 1 to 4, 5 to 14, and 15 to 24 age groups in the United States in 1994; motor vehicle accident fatalities were 38, 58, and 77 percent of the deaths in these age groups, (Singh et al. 1996). Moreover, this category was the 5th leading cause of death in the United States in 1994; 47 percent of these

¹ The terms "alcohol-related" and "alcohol-involved" are used interchangeably throughout this report.

were motor vehicle accident fatalities. Between 1977 and 1994, inclusive, an average of approximately 45,000 people per year died in traffic crashes. Alcohol is estimated to be involved in more than 40 percent of these deaths (NHTSA 1995).

The Surgeon General's Workshop on Drunk Driving (Office of the Surgeon General 1989) emphasized the need for accurate and timely epidemiologic data to address the Nation's drinking and driving problem. Over the past 14 years, AEDS staff have reported periodically on various aspects of alcohol-related traffic fatalities (Aitken and Zobeck 1985; Campbell et al. 1995; Grigson et al. 1985; Lowman et al. 1983; Malin et al. 1982; Malin and Verdugo 1984; Verdugo et al. 1983; Zobeck 1986; Zobeck et al. 1986, 1987, 1988, 1989, 1990, 1991a, b, 1992, 1993, 1994a, b).

Sources and Limitations of Data

The major data source for this report is the Department of Transportation's Fatal Accident Reporting System (FARS). FARS contains data on all traffic crashes within the United States that involve a motor vehicle travelling on a trafficway customarily open to the public and that result in the death of a vehicle occupant or nonmotorist within 30 days of the crash. The system is operated by NHTSA in cooperation with the States. FARS collects detailed data on the conditions of a crash, the vehicle(s) involved, and the driver(s) and other person(s) involved. These data are obtained from each State's existing documents (e.g., police accident reports, death certificates, and hospital medical records).

FARS records alcohol involvement using the following variables:

- *Officer's judgment.*—The judgment of the investigating officer as to whether alcohol was present. This variable was added in 1977.
- *BAC test.*—A finding from any one of several chemical tests that measure the amount of alcohol in the blood. This variable also was added in 1977.
- *Citation for driving under the influence (DUI).*—If a driver is cited, coders are

instructed to mark the officer's judgment variable "yes." This variable was added in 1982.

For this report, a traffic crash is considered to be alcohol related if either the officer's judgment variable or the DUI variable is coded "yes" or the BAC test is positive for at least one driver involved in the crash. A fatality is considered to be alcohol related if the death occurs as the result of an alcohol-related crash; thus, whether the decedent was drinking is immaterial unless he or she was the driver.

In contrast to the definition used in this report, NHTSA defines a traffic crash as alcohol related if either a driver or a nonmotorist has a measurable or estimated BAC of 0.01 g/dl percent or above. NHTSA uses a statistical procedure to estimate unknown BAC values based on data for drivers with known BAC values (Klein 1986a, b). Thus, the methodology in this report for determining alcohol involvement in fatal crashes differs from that used by NHTSA in three respects, as follows: (1) all three alcohol involvement variables are used to define a crash as alcohol related, (2) BAC test results from drivers only are used to flag alcohol involvement, and (3) no estimation procedures are used for unknown BAC values. Recent estimates produced by NHTSA indicate that alcohol involvement in fatal traffic crashes has decreased from 43.5 percent in 1993 to 40.8 percent in 1994 (NHTSA 1995).

Alcohol involvement rates discussed in this report should be viewed as conservative estimates for the following reasons:

- Police are reluctant to judge alcohol involvement, even in fatal crashes (yet when they do so, they are correct more than 90 percent of the time [Mercer 1985]);
- BAC tests are not administered consistently and routinely across jurisdictions;
- Citations for DUI are rarely given (only about 5 percent of all drivers involved in fatal crashes each year are charged with DUI and are reported to FARS);

- AEDS does not impute a value when the BAC level is missing from FARS data; and
- Only alcohol-involved drivers flag accidents as alcohol related; thus, a traffic crash involving an alcohol-impaired pedestrian, without evidence that the driver(s) had been drinking, would not be included in this enumeration of alcohol-related crashes.

The first section of this report presents several rates. Denominator data for the rates are taken from the following sources:

- *Population estimates.*—Bureau of the Census estimates of the U.S. population as of July 1 of each year (Bureau of the Census 1977-1994).
- *Registered vehicles, licensed drivers, and vehicle miles traveled.*—FHA, for each year (FHA 1978–1995).

Organization and Methodology

Data in this report are organized under the following headings:

- General trends and fatality rates;
- BAC testing and results; and
- Young drinking drivers.

Fatality rates, frequencies, and percentages are presented in graphic and tabular form. Graphics are incorporated into the text, while all tables are collected into an appendix. It is not within the scope of this report to exhaustively interpret every aspect of the data presented; rather, results are highlighted. The reader is encouraged to further analyze the data to identify findings not discussed in this report.

GENERAL TRENDS AND FATALITY RATES

This section first presents trends in numbers of traffic crashes, fatalities, and alcohol-related fatalities to indicate the magnitude of the problem of drinking and driving. Trends in four rates—traffic deaths per 100 million vehicle miles traveled (VMT), per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers also are presented to put the raw frequencies into

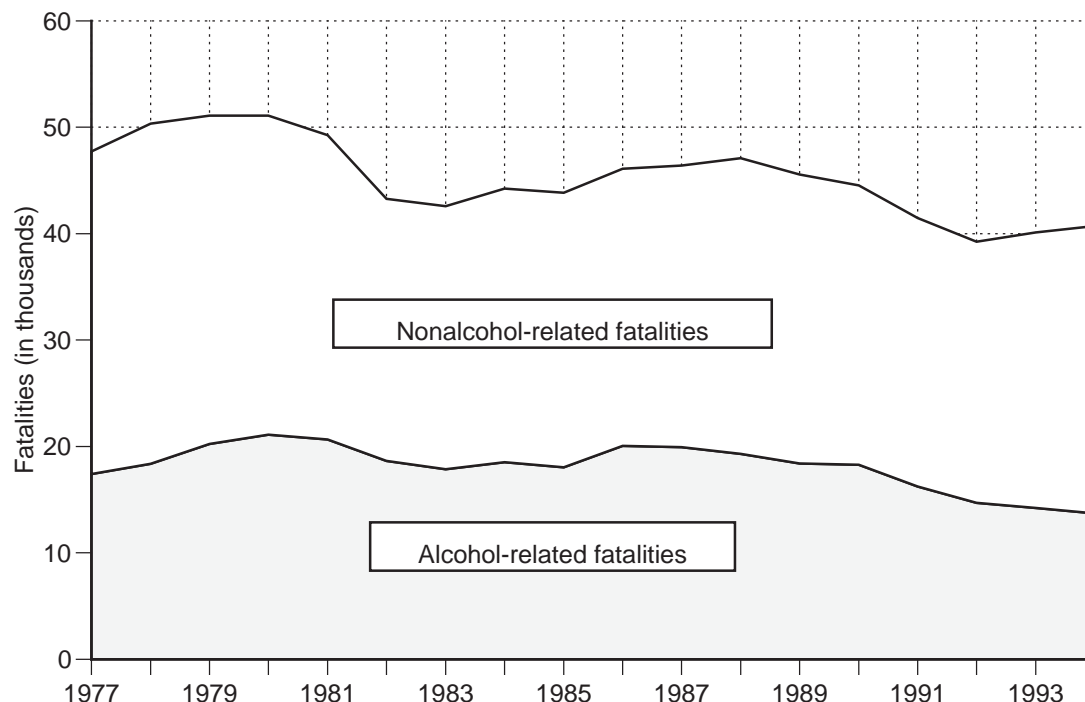
perspective. Then, data on YPLL due to alcohol-related traffic crashes are presented. Next, data on alcohol-related fatalities according to age group are shown and the decedent's role in the crash (i.e., driver, passenger, or nonoccupant) is examined. Finally, the role of the driver is examined in more detail to determine the association of age and sex with involvement in fatal traffic crashes.

Trends in the Number of Traffic Crash Deaths

There were 40,716 traffic crash fatalities in 1994, an increase of 1 percent from the 1993 total of 40,115. However, the percentage of traffic crash fatalities that were alcohol related decreased to 33.6 percent in 1994 (see table 1 in the Appendix). This represents a decrease of 1.9 percentage points from the 1993 figure and is the fourth straight year in which the percentage of alcohol-related traffic crash fatalities has decreased since 1991. While the proportion of alcohol-related traffic crash deaths in 1994 is similar to the proportion in 1977, 6,999 (15 percent) fewer traffic crash deaths and 3,721 (21 percent) fewer alcohol-related traffic crash deaths occurred in 1994 than in 1977.

Figure 1 presents trends in both alcohol-related and nonalcohol-related traffic crash fatalities. The number of alcohol-related traffic crash fatalities increased slightly each year from 1977 to 1980. This was followed by a decreasing trend in alcohol-related traffic crash fatalities from 1981 to 1983. There was a sharp decrease in overall traffic crash fatalities in 1982, resulting primarily from a decrease in nonalcohol-related fatalities. In 1984 traffic crash fatalities increased for both classes of fatalities, followed in 1985 by a slight increase in nonalcohol-related fatalities and a slight decrease in alcohol-related traffic crash fatalities. In 1986 there was a sharp increase (11 percent) in alcohol-related deaths, while nonalcohol-related deaths showed only a modest (1 percent) increase. Beginning in 1987, the number of alcohol-related traffic crash fatalities decreased each year, ending with an 18-year low of 13,693 fatalities. The

Figure 1. Alcohol-related and nonalcohol-related traffic crash fatalities, United States, 1977–94.



number of nonalcohol-related traffic crash fatalities was not as stable in these years, with increases in 1988, 1993, and 1994.

Trends in the Rates of Traffic Crash Deaths

The probability of having or being involved in a traffic accident depends on several factors (e.g., the amount of time a person spends on the road, the number of miles driven, vehicle speed, or type of vehicle driven). Four associated “risk factors”—VMT, the number of people in the population, the number of registered vehicles, and the number of licensed drivers—frequently are used to express traffic crash fatalities as rates per these denominators. These rates place the raw frequencies within a context of associated risk factors, each of which are subject to change over the years. Figures 2a to 2c graphically present these rates for all fatalities and for alcohol-related fatalities; the data for these figures are included in table 2.

Figure 2a illustrates the downward trends from 1977 to 1994 in total and alcohol-related traffic crash fatalities per 100 million VMT. In

1994, both total and alcohol-related traffic fatalities per 100 million VMT decreased from the 1993 rate. Figures 2b and 2c indicate that trends are similar for both total and alcohol-related traffic crash fatalities per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers. Rates for total traffic crash fatalities per 100,000 population and 100,000 licensed drivers increased slightly from 1993 to 1994, while the rate of traffic crash fatalities per 100,000 registered vehicles decreased slightly during this period. Each of these rates for alcohol-related fatalities decreased slightly from 1993 to 1994.

Table 2 in the Appendix indicates that, from 1977 to 1994, total traffic crash fatality rates decreased 47, 28, 37, and 33 percent per 100 million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively. Corresponding decreases in these rates for alcohol-related fatalities (56, 35, 41, and 42 percent per 100 million VMT, per

Figure 2a. Total and alcohol-related traffic fatality rates per 100 million vehicle miles traveled (VMT), United States, 1977–94.

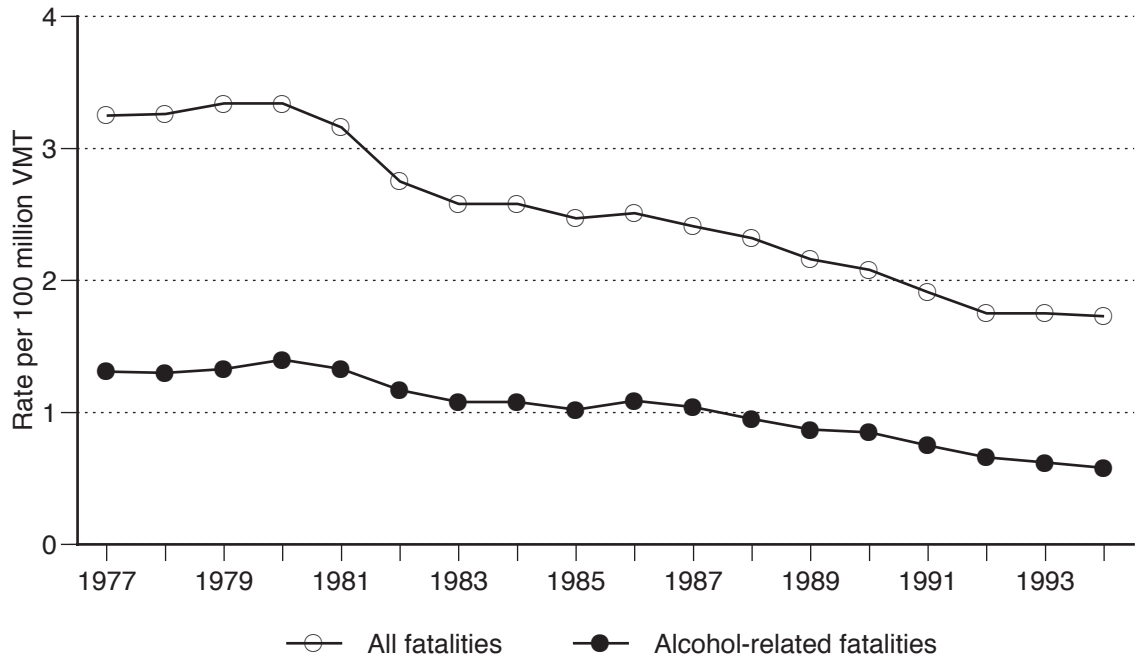


Figure 2b. Traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–94.

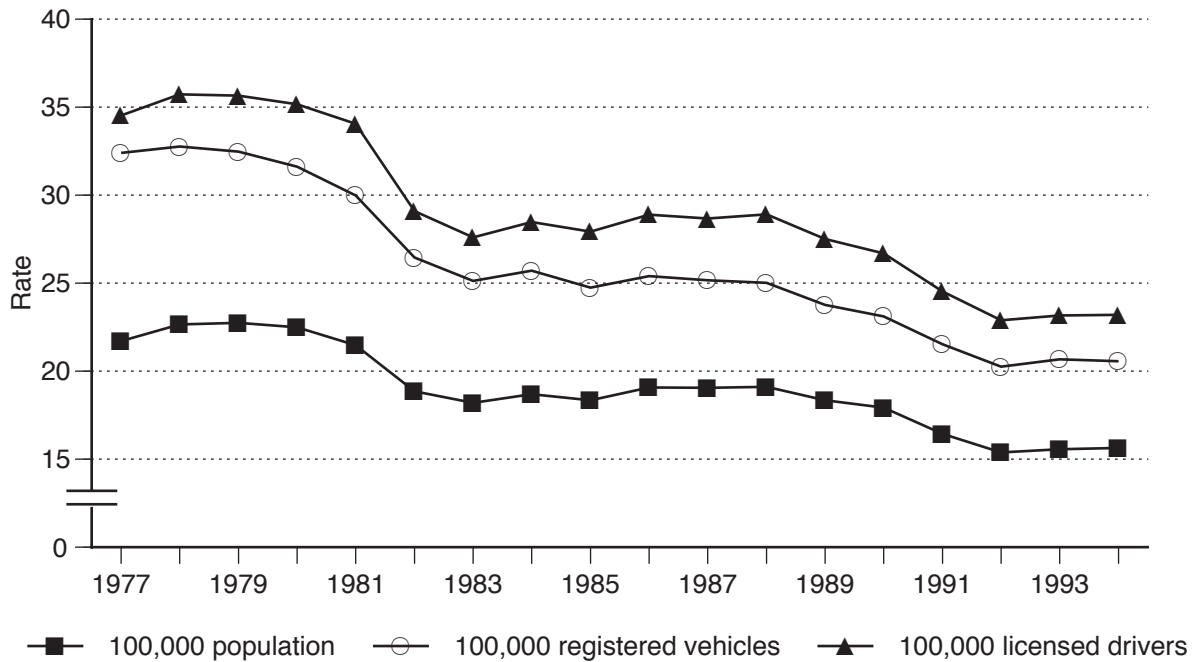
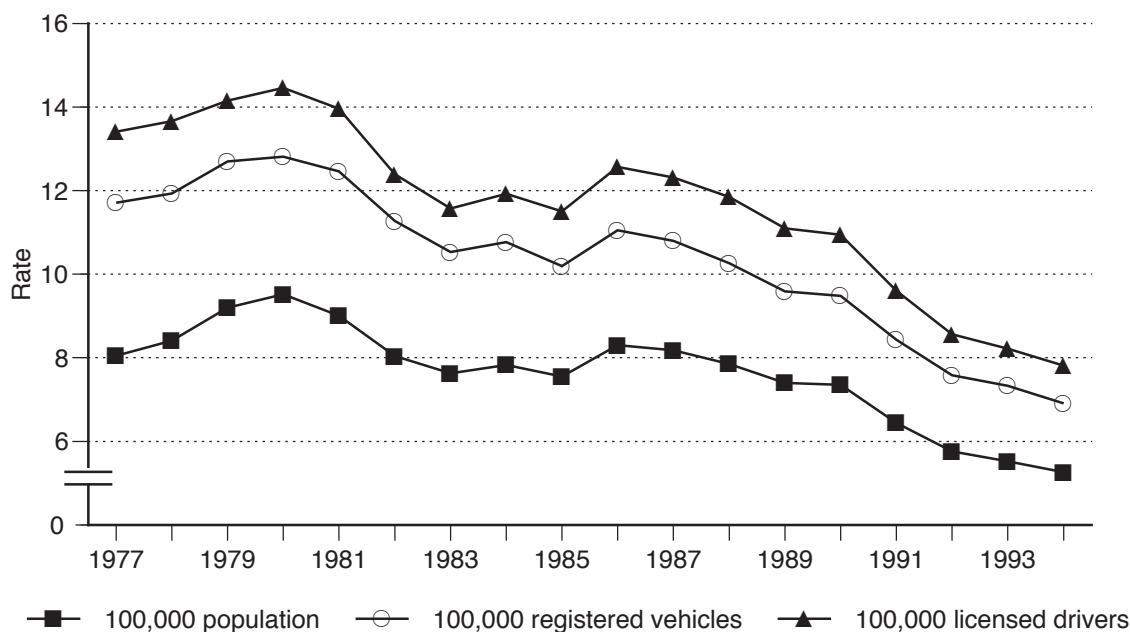


Figure 2c. Alcohol-related traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–94.



100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively) likewise show a decrease over the 18-year period. The decreases indicated by the raw frequencies for total and alcohol-related traffic crash fatalities during this period may obscure the tendency for these fatalities to decrease even as highways are becoming more crowded.

Trends in Years of Potential Life Lost

YPLL is a measure used to assess the human cost of a particular cause of death. YPLL is calculated by subtracting the age at death from age 65 for each death and then accumulating the total across all deaths. The technique is especially useful for indicating the severity of causes of death that particularly affect youth, such as alcohol-related traffic crashes (e.g., Bertolucci et al. 1985; Centers for Disease Control 1988a, b; McDonnell and Maynard 1985; Romeder and McWhinnie 1977). Total YPLL, mean YPLL, and rate of YPLL per 100,000 population under age 65 for all traffic crash deaths and for alcohol-related

traffic crash deaths are presented in table 3 in the Appendix.

In 1994, YPLL due to all traffic crashes totaled 1,143,175, representing 796,856 years among males and 346,319 years among females. These values for males and females represent a 29- and 14-percent decrease in YPLL due to traffic crashes, respectively, from the 1977 totals. From 1977 to 1994, the rate of YPLL per 100,000 population under age 65 for all traffic crash deaths declined 41 percent among males and 27 percent among females. There was a slight (0.1 percent) decrease in YPLL from traffic crashes from 1993 to 1994 among males but a 4-percent increase among females. Furthermore, the rate of YPLL per 100,000 population under age 65 for all traffic crash deaths decreased 1 percent among males from 1993 to 1994, but increased 3 percent among females.

In 1994, 43 percent of the YPLL (339,654 years) among males and 30 percent of the YPLL (103,579 years) among females was attributable to alcohol-related crashes. These

values represent a 28- and 23-percent decrease for males and females, respectively, in YPLL attributable to alcohol-related crashes. From 1977 to 1994, the rate of YPLL per 100,000 population under age 65 for alcohol-related traffic crash deaths declined 39 percent among males and 35 percent among females. For males, there was a 4-percent decrease in YPLL for alcohol-related traffic crash deaths between 1993 and 1994; for females, there was a 3-percent decrease. Between 1993 and 1994, the rate of YPLL per 100,000 population under age 65 for alcohol-related traffic crash deaths decreased 5 percent among males and 4 percent among females.

Despite fluctuations in the number and rate of total and alcohol-related YPLL over the 18 years studied, the mean YPLL for each category remained relatively constant for both sexes at about 34 to 37 years for each death due to all traffic crashes and alcohol-related traffic crashes.

Age Trends in Alcohol-Related Traffic Crash Fatalities

In 1994, approximately 76 percent of those killed in alcohol-related fatal traffic crashes were ages 16 to 44 (see table 4 in the Appendix). The percentage of persons ages 16 to 24 killed in alcohol-related traffic crashes decreased 13 percentage points from 1977 to 1994, while the percentage of persons ages 25 to 44 killed increased 14 percentage points during that period. The percentage of decedents in alcohol-related traffic crashes who were under age 16 decreased 1 percentage point between 1977 and 1994 and the percentage of decedents who were over age 64 increased 1 percentage point during those years. The number of alcohol-related traffic crash fatalities decreased from 1993 to 1994 among persons ages 16 to 24 (4 percent) and ages 25 to 44 (5 percent).

Decedent's Role in Fatal Traffic Crashes

Analyses of FARS data suggest alcohol involvement and risk of death vary by a person's role (i.e., driver, passenger, or nonoccupant²) in the crash (see table 5 in the Appendix). In 1994, 40 percent of all driver

deaths, 33 percent of all passenger deaths, and 12 percent of all nonoccupant deaths were alcohol related.

Further analysis of decedents' roles in crashes indicates that drivers were more likely than those in other roles to die in either alcohol-related or nonalcohol-related crashes; however, drivers constituted a larger proportion of fatalities in alcohol-related crashes than in nonalcohol-related crashes (see figures 3a and 3b). The percentage of passenger deaths was similar in alcohol-related and nonalcohol-related traffic crashes; however, there was a higher proportion of nonoccupant deaths in nonalcohol-related traffic crashes than in alcohol-related traffic crashes.

More detailed data on drivers show that there were more than three times as many male drivers as female drivers involved in fatal traffic crashes over the 18-year study period from 1977 to 1994 (see table 6 in the Appendix). Furthermore, the percentage of male drivers who were alcohol involved was about twice as high as the percentage of female drivers who were alcohol involved. The number of male drivers involved in fatal traffic crashes decreased 18 percent from 1977 to 1994, while the number of female drivers involved in fatal traffic crashes increased 25 percent during the same period. The number of alcohol-involved male drivers decreased 25 percent (from 14,199 to 10,695) from 1977 to 1994; the number of alcohol-involved female drivers increased 12 percent (from 1,628 to 1,822). The number of drivers that were alcohol involved decreased 4 percent among males and 5 percent among females from 1993 to 1994.

² The nonoccupant category includes the more detailed categories of pedestrian, pedalcyclist, other nonoccupant role, and unknown person role. In an earlier traffic fatality surveillance report (Zobeck 1986), data for each category were presented. However, since the majority of persons in these categories were pedestrians, all cases have been combined into a single category (nonoccupant) for the present report.

Figure 3a. Decedent's role in nonalcohol-related traffic fatalities, United States, 1994.

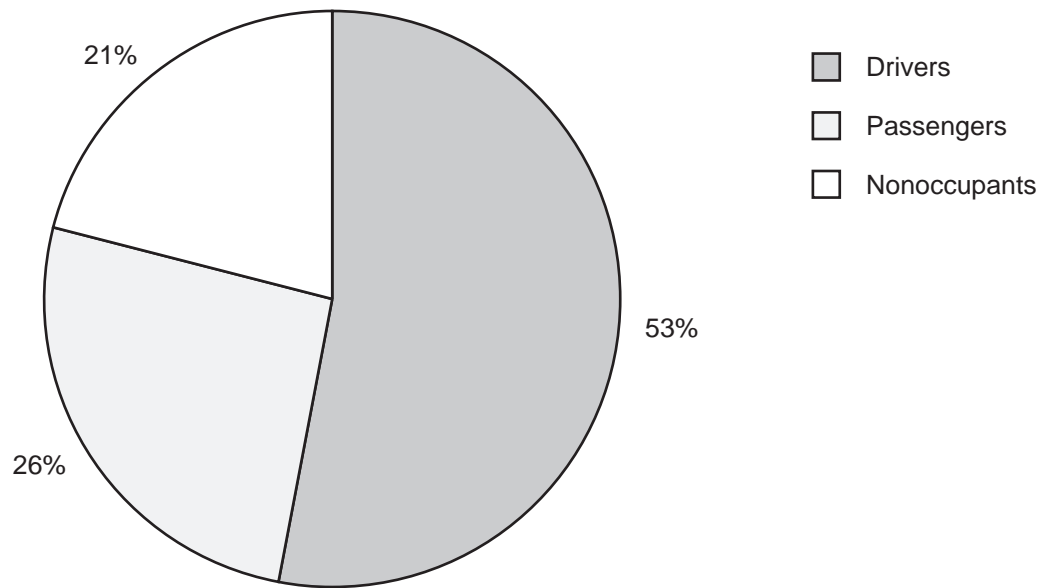
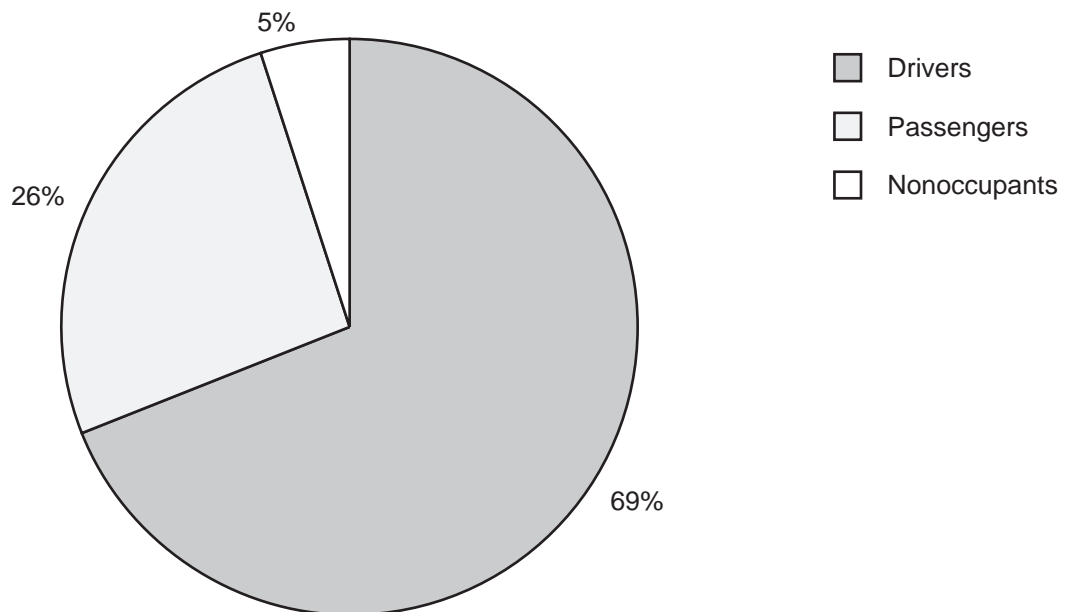


Figure 3b. Decedent's role in alcohol-related traffic fatalities, United States, 1994.



BAC TESTING AND RESULTS

This section presents the rates of BAC testing across State jurisdictions and by driver age and sex. Mean BAC test scores according to role (i.e., driver, pedestrian, or pedalcyclist) are shown, as are percentage distributions of BAC results according to age group. Finally, test results for drivers with BAC scores of 0.10 g/dl percent³ or more are examined.

Rates of BAC Testing

As indicated in table 7 (see Appendix), BAC tests have not been administered consistently across States. In 1977, only 7 States tested their dead drivers 80 percent or more of the time, with a nationwide rate of 42 percent. Furthermore, rates of testing among States varied widely, from 0 percent in North Dakota and New Mexico to 91 percent in Oregon. In 1994, 21 States tested their dead drivers 80 percent or more of the time, with a nationwide rate of 72 percent (an increase from the 1993 rate of 69 percent). As in 1977, there was a wide range of testing rates among States in 1994, with the District of Columbia having the lowest rate (0 percent) and Hawaii the highest (98 percent).

Testing rates for surviving drivers are even lower than those for dead drivers because many States prohibit mandatory testing of surviving drivers (although refusal to submit to a test may be used as evidence of intoxication in some jurisdictions). In 1977 the nationwide rate of BAC testing of surviving drivers was 11 percent; however, no State tested more than 80 percent of its surviving drivers. The national rate of BAC testing of surviving drivers was 24 percent in 1994, up substantially from the national rate in 1977 but virtually unchanged from the 1993 rate. However, as in 1977, no State tested more than 80 percent of its surviving drivers.

As of January 1, 1994, 32 States had enacted legislation requiring BAC testing of drivers killed in traffic crashes (Department of Transportation 1994). In 1994, 18 of the 32 States⁴ tested fewer than 80 percent of these drivers.

The increase in the administration of BAC tests from 1977 to 1994 is shown in table 8 in the Appendix, which presents the number of drivers tested as well as the percentage, according to sex, age, and injury severity. Testing of deceased male and female drivers increased from 1977 to 1994 across all age groups (see figures 4a and 4b), with fairly consistent rates across the age groups for both 1977 and 1994, except for the 45 and older age group, which had the lowest rate of testing in both years. Testing rates were higher among males than among females for all age groups; this was true for 1977 also, except for the 16 to 19 year age group.

The increase between 1977 and 1994 in the rates of BAC testing of surviving drivers involved in fatal traffic crashes is seen across all age groups (see figures 5a and 5b) for both males and females. However, the magnitude of this increase was smaller than the increase in testing dead drivers between 1977 and 1994.

Test Results

One indication of the level of intoxication among drinking drivers is provided by an examination of their mean BAC scores (see table 9 in the Appendix). The mean BAC score for drinking drivers remained at 0.16 or 0.17 g/dl percent throughout the 18-year study period. Even higher than the drinking driver mean was the mean BAC score for pedestrians with positive BAC results, the mean BAC for this group held steady at 0.19 to 0.20 g/dl percent.

In past years, AEDS analyses (Aitken and Zobeck 1985; Malin et al. 1982; Malin and

³ BAC is expressed as the weight of the amount of alcohol in a specified volume of blood (e.g., 0.10 grams of ethanol per deciliter of blood).

⁴ These States are Arizona, Georgia, Idaho, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Nebraska, New Hampshire, New York, North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, and West Virginia.

Figure 4a. Percentage of male drivers killed in fatal traffic crashes and given a BAC test, according to age, United States, 1977 and 1994.

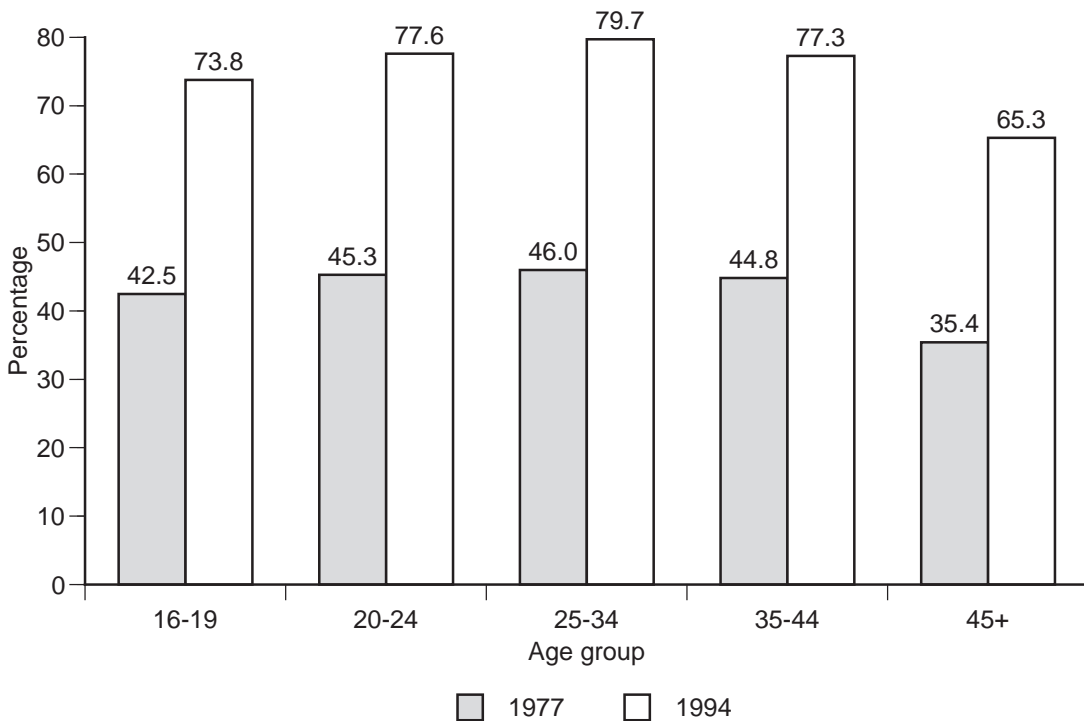


Figure 4b. Percentage of female drivers killed in fatal traffic crashes and given a BAC test, according to age, United States, 1977 and 1994.

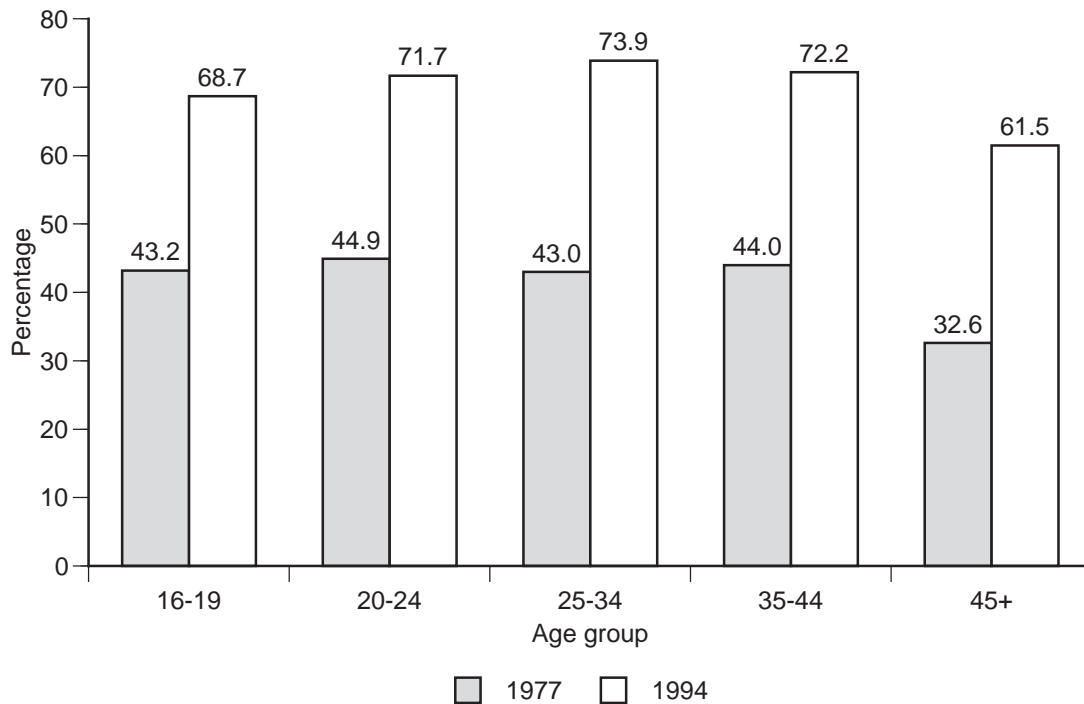


Figure 5a. Percentage of male drivers surviving fatal traffic crashes and given a BAC test, according to age, United States, 1977 and 1994.

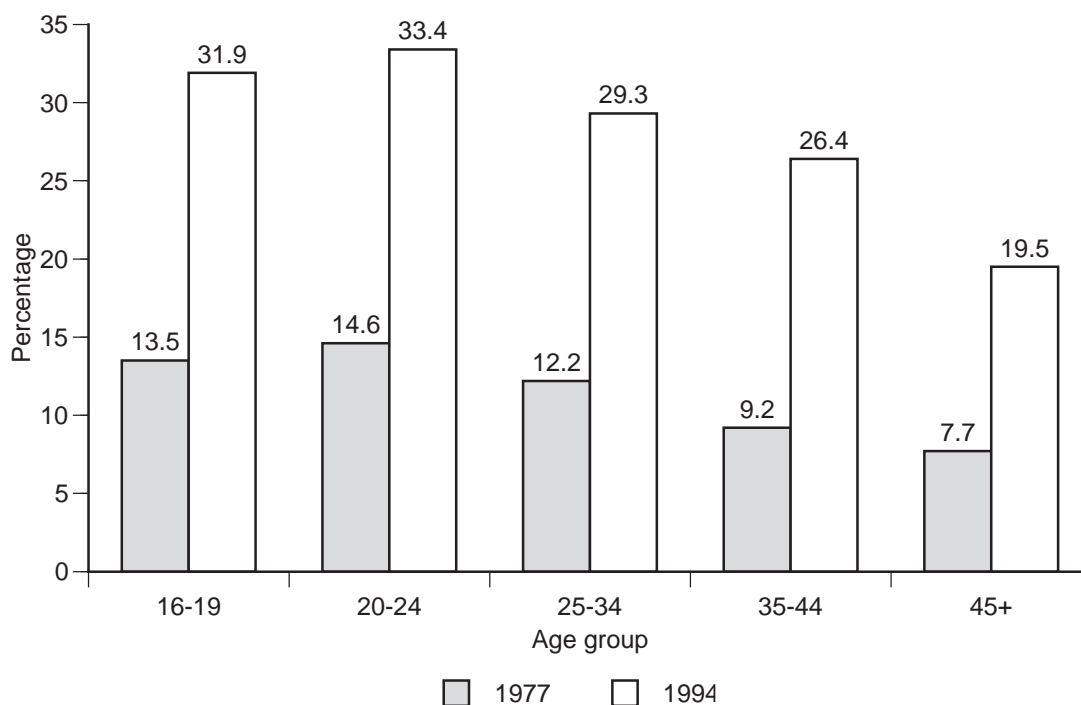
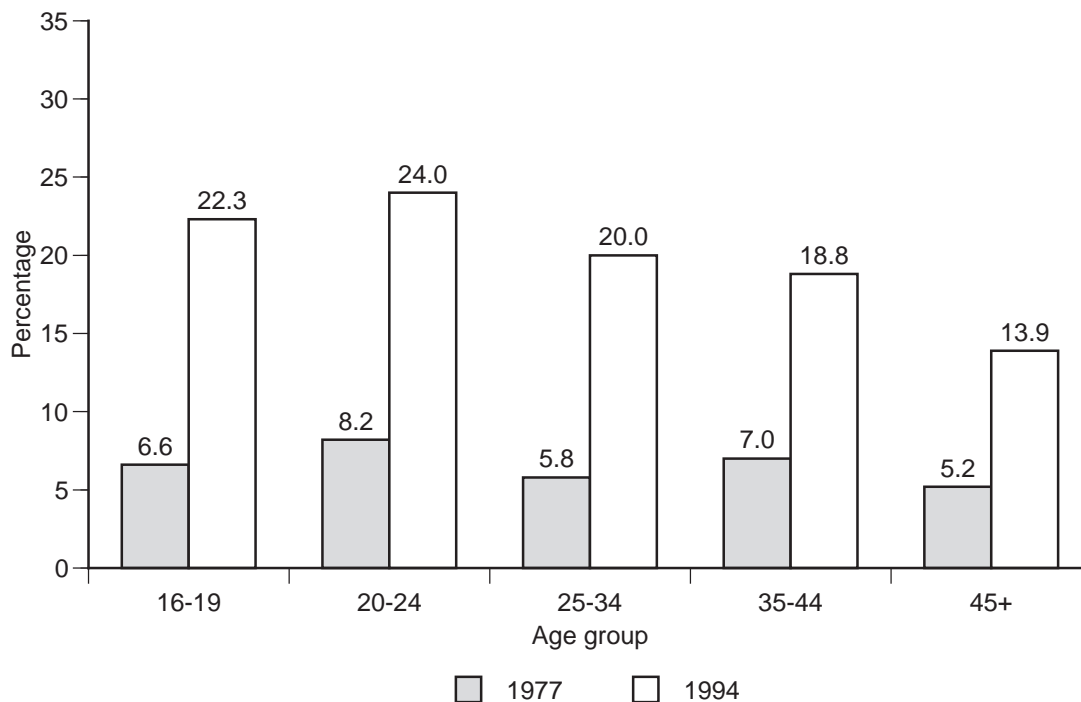


Figure 5b. Percentage of female drivers surviving fatal traffic crashes and given a BAC test, according to age, United States, 1977 and 1994.



Verdugo 1984) tracked the BAC percentages of drivers by age group to determine at what BAC value the greatest proportion of drivers in an age group become involved in fatal crashes. Figure 6 updates previous analyses by presenting data for 1994. Data for all 18 years are presented in table 10 in the Appendix. The current results continue to support previous evidence that the majority of the youngest drivers (ages 16 to 19) have a peak BAC level of 0.12 g/dl percent or lower, while the majority of older drivers peak at 0.17 g/dl percent or higher. Young drivers may become involved in alcohol-related crashes at lower BAC levels than do older drivers, because young drivers tend to have limited experience with driving and their tolerance for alcohol is usually lower than that of older drinking drivers.

In most States, a BAC test result of 0.10 g/dl percent or more is considered evidence of intoxication. In 1994, approximately 78 percent of drivers with positive BAC results were legally intoxicated

at the time of the crash (see table 11 in the Appendix). Persons ages 35 to 44 were more likely than those in other age groups to have BAC results of 0.10 percent or higher. The percentages of drivers involved in fatal traffic crashes who were legally intoxicated varied across age groups in 1994, with a greater spread among females than among males. Generally, BAC-positive male drivers were more likely than BAC-positive female drivers to be legally intoxicated at the time of the crash. Percentages for males within all age groups have remained fairly stable over the 18-year study period, but percentages for females within different age groups have varied considerably.

YOUNG DRINKING DRIVERS

The problem of young drinking drivers continues to be of interest to AEDS (Aitken and Zobeck 1985; Lowman et al. 1983; Malin et al. 1982, 1985a, b; Verdugo et al. 1983). This section reexamines and updates several issues and trends discussed in prior AEDS analyses.

Figure 6. Percentage distributions of BAC among alcohol-involved drivers, according to age, United States, 1994.

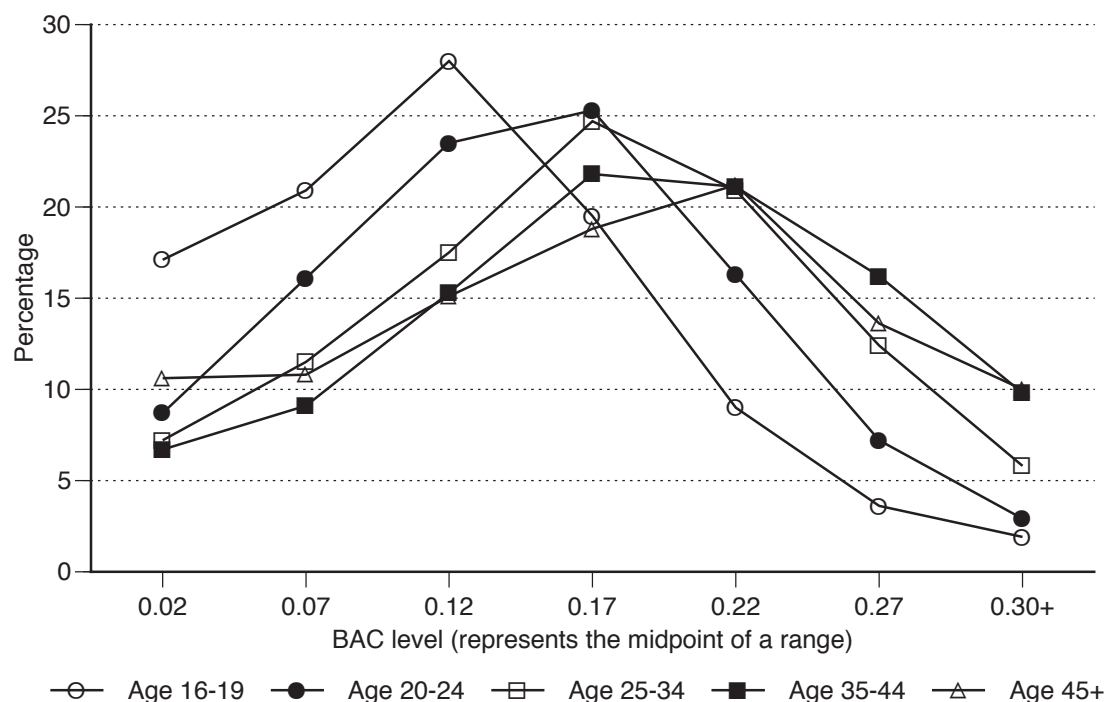


Table 12 in the Appendix indicates that there were 4,438 deaths associated with young (i.e., ages 16 to 24) drinking drivers in 1994. This total is down 6 percent from the 1993 total of 4,699 and is the eighth consecutive decline since 1986. The 1994 total represents a 55-percent decrease from the 18-year high of 9,918 in 1980. In 1994, 61 percent of decedents in fatalities associated with young drinking drivers were drivers, 35 percent were passengers, and 4 percent were nonoccupants. These percentages have remained fairly stable over the 18-year period from 1977 to 1994.

From 1977 to 1994, deaths among drivers of all ages decreased 9 percent (26,088 versus 23,691); however, from 1993 to 1994, deaths among drivers of all ages increased 2 percent (see table 13 in the Appendix). The number of traffic crash fatalities among young drivers decreased from 10,058 in 1977 to 6,125 in 1994 (39 percent). The number of young driver fatalities increased 2 percent from 1993 to 1994 (from 5,990 to 6,125). However, the percentage of driver fatalities involving young drivers remained stable at 25.9 percent. Drinking driver deaths of all ages decreased 12 percent between 1977 and 1994 (from 9,572 to 8,453). From 1977 to 1994 deaths among young drinking drivers decreased 43 percent. Total fatalities among drinking drivers of all ages decreased 2 percent from 1993 to 1994. Traffic crash fatalities among young drinking drivers decreased 3 percent between 1993 and 1994. As in earlier years, young drivers continue to be overrepresented in drinking driver deaths (see Aitken and Zobeck 1985). For example, in 1994, persons ages 16 to 24 accounted for 28 percent of all such deaths but constituted only 14 percent of the U.S. licensed driver population (FHA 1995).

CONCLUSIONS

There were 40,716 traffic crash fatalities in 1994, an increase of 1 percent from the 1993 total of 40,115 deaths and a decrease of 15 percent from the 1977 total of 47,715 deaths. There was a 4-percent decrease in the

number alcohol-related traffic crash fatalities from 1993 to 1994 and a 21-percent decrease from 1977 to 1994. There were decreases in the rates of total traffic crash fatalities per 100 million VMT and per 100,000 registered vehicles from 1993 to 1994. Alcohol-related traffic crash fatality rates for these categories also decreased from 1993 to 1994, as did alcohol fatality rates per 100,000 population and per 100,000 licensed drivers. Alcohol-related fatalities per 100 million VMT dropped 56 percent from 1977 to 1994 and alcohol-related fatalities per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers decreased 35, 41, and 42 percent, respectively. The number of YPLL due to alcohol-related traffic crashes decreased 28 and 23 percent for males and females, respectively, over the 18-year study period. In 1994, drivers, as opposed to those in other roles (e.g., passengers or nonoccupants), were more likely to die in traffic crashes, whether alcohol related or not; on the other hand, a higher percentage of nonoccupants were killed in nonalcohol-related traffic crashes than in alcohol-related traffic crashes. In 1994, the number of deaths associated with young drinking drivers ages 16 to 24 declined 47 percent from the 1977 totals and 6 percent from the 1993 totals. Traffic crash fatalities among young drinking drivers declined 43 percent from 1977 to 1994 and 3 percent from 1993 to 1994.

Although the number of alcohol-related traffic crash fatalities decreased in 1994, even as the total number of traffic crash fatalities increased, some serious problems still exist, as indicated by the following measures. First, the average BAC of drivers involved in fatal traffic crashes and had positive BAC scores was 0.17 g/dl; furthermore, 78 percent of these drivers were legally intoxicated. Second, although the national rate of dead driver BAC testing increased from 69 percent in 1993 to 72 percent in 1994, the national rate of testing surviving drivers remained constant at just 24 percent. Third, 4,438 alcohol-related traffic crash fatalities were associated with young drinking drivers. Finally, 8,453 drinking

drivers died in 1994, 28 percent of whom were ages 16 to 24.

This report is descriptive; therefore, no attempt has been made to analyze all possible factors that might explain the observed trends. However, the following are some factors that may have affected these trends.

First, since 1987, there has been a decreasing trend in alcohol-related traffic crash fatalities. It seems logical to assume that safety improvements for both vehicles and roadways, along with increased seatbelt use and passive restraint systems, have influenced both total and alcohol-related traffic crash fatalities. Second, public awareness of and activism against the problem of drinking and driving have increased. Third, in response to Federal initiatives, States increased their minimum legal drinking age to 21; as of July 1, 1988, all 50 States and the District of Columbia have in effect a minimum legal drinking age of 21. Finally, changes in police enforcement (e.g., sobriety checkpoints) and in consequences of alcohol-impaired driving (e.g., administrative license revocation) have likely contributed to changes in drinking and driving over the years. Any effects that these factors, either singly or in combination, may have had on the present data are unknown. However, continued surveillance of these data will assist in resolving issues about the strength and direction of the observed trends.

REFERENCES

- Aitken, S.S., and Zobeck, T.S. Epidemiologic Bulletin No. 8: Trends in alcohol-related fatal motor vehicle accidents for 1983. *Alcohol Health & Research World* 9(4):60-62, 1985.
- Bertolucci, D.; Noble, J.; Dufour, M.; and Centers for Disease Control. Alcohol-associated premature mortality—United States, 1980. *Morbidity and Mortality Weekly Report* 34(32):493-494, 1985.
- Bureau of the Census. *Current Population Reports. Population Estimates and Projections. Series P-25.* Washington, DC: Bureau of the Census, 1977-1994.
- Campbell, K.; Zobeck, T.; and Bertolucci, D. *Surveillance Report #34: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1993.* Rockville, MD: National Institute on Alcohol Abuse and Alcoholism NIAAA), Division of Biometry and Epidemiology (DBE), December 1995.
- Centers for Disease Control (CDC). Years of potential life lost due to cancer—United States, 1968-1985. *Morbidity and Mortality Weekly Report* 37(48):747-749, 1988a.
- CDC. Premature mortality due to alcohol-related motor vehicle traffic fatalities—United States, 1987. *Morbidity and Mortality Weekly Report* 37(49):753-755, 1988b.
- Department of Transportation. *Digest of State Alcohol-Highway Safety Related Legislation, Twelfth Edition.* Washington, DC: U.S. Department of Transportation (DOT), January 1994.
- Federal Highway Administration. *Highway Statistics.* Washington, DC: DOT, 1978-1995.
- Grigson, M.B.; Zobeck, T.S.; Williams, G.; and Bertolucci, D. Alcohol-related traffic fatalities during Christmas and New Year's holidays—United States, 1977-1984. *Morbidity and Mortality Weekly Report* 34(4):737-738, 1985.
- Klein, T.M. *A Guide to Using the Fatal Accident Reporting System BAC Distribution Files.* Sigmastat, Report to National Highway Traffic Safety Administration (NHTSA), July 1986a.
- Klein, T.M. *A Method of Estimating Posterior BAC Distribution for Persons Involved in Fatal Traffic Accidents.* Sigmastat, Final Report for NHTSA, July 1986b.
- Lowman, C.; Verdugo, N.; Malin, H.; and Aitken S.S. Patterns of alcohol use among teenage drivers in fatal motor vehicle accidents—United States, 1977-1981. *Morbidity and Mortality Weekly Report* 32(26):344-347, 1983.
- Malin, H.; Trumble, J.; Kaelber, C.; and Lubren, B. Alcohol-related highway fatalities among young drivers—United States. *Morbidity and Mortality Weekly Report* 31(48):641-644, 1982.
- Malin, H., and Verdugo, N. Epidemiologic Bulletin No. 3: Differences in alcohol involvement in fatal motor vehicle accidents related to age of drivers. *Alcohol Health & Research World* 8(3):56-59, 1984.
- Malin, H.; Verdugo, N.; Graves, C.; Aitken, S.S.; Harford, T.; and Kaelber, C. Alcohol and its relation to traffic deaths among young persons. In: Kaye, S., and Meier, G. (eds.), *Alcohol, Drugs and Traffic Safety.* Proceedings of the Ninth International Conference on Alcohol, Drugs and Traffic Safety, San Juan, Puerto Rico, 1983. San Juan: University of Puerto Rico, 1985a.
- Malin, H.; Zobeck, T.S.; Grigson, M.B.; Aitken, S.S., and Bertolucci, D. Alcohol-Related Fatal Motor Vehicle Accidents Among College Age Youth. Paper presented at the National Council on Alcoholism/National Alcohol Forum, Washington, DC, April 1985b.
- McDonnell, R., and Maynard, A. Estimation of life years lost from alcohol-related premature death. *Alcohol and Alcoholism* 20(4):435-443, 1985.
- Mercer, G.W. *Counter Attack Traffic Research Papers 1984.* British Columbia, Canada: Police Services Branch, Ministry of the Attorney General, 1985.
- National Highway Traffic Safety Administration. *Traffic Safety Facts 1994: A Compilation of Motor Vehicle Crash Data from the Fatal Accident Reporting System and the General Estimates System.* Washington, DC: DOT, August 1995.

- Office of the Surgeon General. *Surgeon General's Workshop on Drunk Driving*. Proceedings. Washington, DC: December 14-16, 1988. U.S. Department of Health and Human Services, 1989.
- Romeder, J.M., and McWhinnie, J.R. Potential years of life lost between ages 1 and 70: An indicator of premature mortality for health planning. *International Journal of Epidemiology* 6(2):143-151, 1977.
- Singh, G.K.; Kochanek, K.D.; and MacDorman, M.F. Advance report of final mortality statistics, 1994. *Monthly Vital Statistics Report* 45(3, suppl.). Hyattsville, MD: National Center for Health Statistics, 1996.
- Verdugo, N.; Malin, H.; and Lowman, C. Blood alcohol concentrations among young drivers—United States, 1982. *Morbidity and Mortality Weekly Report* 32(49):646-648, 1983.
- Zobeck, T. *Surveillance Report #1: Trends in Alcohol-Related Traffic Fatalities, 1977-1984*. Rockville, MD: NIAAA, DBE, July 1986.
- Zobeck, T.; Campbell, K.; Grant, B.; and Bertolucci, D. *Surveillance Report #30: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1979-1992*. Rockville, MD: NIAAA, DBE, November 1994a.
- Zobeck, T.; Elliott, S.; and Bertolucci, D. *Surveillance Report #19: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1989*. Rockville, MD: NIAAA, DBE, November 1991a.
- Zobeck, T.; Elliott, S.; Grant, B.; and Bertolucci, D. *Surveillance Report #17: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1988*. Rockville, MD: NIAAA, DBE, March 1991b.
- Zobeck, T.S.; Grant, B.F.; Stinson, F.S.; and Bertolucci, D. Alcohol involvement in fatal traffic crashes in the United States: 1979-90. *Addiction* 89:227-233, 1994b.
- Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #6: Trends in Alcohol-Related Fatal Traffic Accidents, United States: 1977-1985*. Rockville, MD: NIAAA, DEB, August 1987.
- Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #9: Trends in Alcohol-Related Fatal Traffic Accidents, United States: 1977-1986*. Rockville, MD: NIAAA, DBE, August 1988.
- Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #12: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1987*. Rockville, MD: NIAAA, DBE, August 1989.
- Zobeck, T.; Stinson, F.; and Bertolucci, D. *Surveillance Report #22: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1990*. Rockville, MD: NIAAA, DBE, November 1992.
- Zobeck, T.S.; Stinson, F.S.; Grant, B.F.; and Bertolucci, D. *Surveillance Report #26: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977-1991*. Rockville, MD: NIAAA, DBE, November 1993.
- Zobeck, T.S.; Williams, G.; and Bertolucci, D. Epidemiologic Bulletin No. 13: Trends in alcohol-related traffic fatalities, 1977-1984. *Alcohol Health & Research World* 11(1):60-63, 1986.
- Zobeck, T.S.; Williams, G.; Grant, B.; and Bertolucci, D. Epidemiologic Bulletin No. 24: Years of potential life lost and other trends in alcohol-related fatal traffic crashes, 1977-1987. *Alcohol Health & Research World* 14(1):63-68, 1990.

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Table 1. Traffic crashes, traffic crash fatalities, and alcohol-related traffic crash fatalities, United States, 1977–94.

Year	Event			
	Traffic crashes	Traffic crash fatalities (a)	Alcohol-related traffic crash fatalities (b)	Percent of all traffic crash fatalities (b/a)
1994	36,254	40,716	13,693	33.6
1993	35,747	40,115	14,225	35.5
1992	34,942	39,250	14,684	37.4
1991	36,895	41,462	16,231	39.1
1990	39,779	44,529	18,279	41.0
1989	40,718	45,555	18,381	40.3
1988	42,130	47,087	19,303	41.0
1987	41,435	46,386	19,918	42.9
1986	41,090	46,082	20,038	43.5
1985	39,196	43,825	18,040	41.2
1984	39,622	44,241	18,523	41.9
1983	37,971	42,584	17,847	41.9
1982	38,899	43,721	18,622	42.6
1981	43,979	49,268	20,662	41.9
1980	45,271	51,077	21,114	41.3
1979	45,212	51,084	20,245	39.6
1978	44,433	50,327	18,362	36.5
1977	42,064	47,715	17,414	36.5

Table 2. Total and alcohol-related traffic fatality rates per 100 million VMT¹ and 100,000 population, registered vehicles, and licensed drivers, United States, 1977–94.

Year	Rate			
	100 million VMT ¹	100,000 population	100,000 registered vehicles ²	100,000 licensed drivers
All fatalities				
1994	1.73	15.64	20.56	23.21
1993	1.75	15.56	20.67	23.17
1992	1.75	15.39	20.26	22.89
1991	1.91	16.44	21.53	24.53
1990	2.08	17.93	23.12	26.70
1989	2.16	18.35	23.76	27.52
1988	2.32	19.12	25.02	28.91
1987	2.41	19.06	25.17	28.67
1986	2.51	19.08	25.40	28.90
1985	2.47	18.35	24.75	27.94
1984	2.58	18.70	25.72	28.47
1983	2.58	18.20	25.13	27.61
1982	2.75	18.86	26.45	29.09
1981	3.16	21.48	29.99	34.06
1980	3.34	22.49	31.62	35.16
1979	3.34	22.75	32.48	35.66
1978	3.26	22.66	32.76	35.74
1977	3.25	21.72	32.40	34.54
Percent change 1977–94	-46.77	-27.99	-36.54	-32.80
Alcohol-related fatalities				
1994	0.58	5.26	6.91	7.81
1993	0.62	5.52	7.33	8.22
1992	0.66	5.76	7.58	8.56
1991	0.75	6.44	8.43	9.60
1990	0.85	7.35	9.48	10.94
1989	0.87	7.40	9.59	11.10
1988	0.95	7.85	10.26	11.85
1987	1.04	8.18	10.80	12.31
1986	1.09	8.30	11.05	12.57
1985	1.02	7.55	10.19	11.50
1984	1.08	7.83	10.77	11.92
1983	1.08	7.63	10.53	11.57
1982	1.17	8.04	11.27	12.39
1981	1.33	9.01	12.46	13.96
1980	1.40	9.52	12.81	14.46
1979	1.33	9.20	12.70	14.15
1978	1.30	8.41	11.93	13.66
1977	1.31	8.05	11.71	13.41
Percent change 1977–94	-55.73	-34.66	-40.99	-41.76

¹ Vehicle miles traveled.

² Includes all private, commercial, and public-owned motor vehicles and motorcycles.

Table 3. Years of potential life lost (YPLL) from total and alcohol-related traffic crashes, according to sex, United States, 1977–94.

Year and sex	YPLL						
	All traffic crash deaths			Alcohol-related traffic crash deaths			Percent alcohol-related ²
	Years	Mean	Rate ¹	Years	Mean	Rate	
Male							
1994	796,856	33.9	701	339,654	33.9	299	42.6
1993	797,541	33.9	709	353,734	34.0	314	44.4
1992	788,396	34.1	707	365,028	34.2	328	46.3
1991	858,689	34.5	779	418,068	34.8	379	48.7
1990	942,683	34.6	867	474,137	34.8	436	50.3
1989	954,983	34.7	881	470,095	34.8	434	49.2
1988	1,025,654	35.3	955	508,336	35.6	473	49.6
1987	1,027,956	35.4	966	519,312	35.5	488	50.5
1986	1,050,186	35.8	995	541,247	36.1	508	51.5
1985	979,059	35.4	936	478,682	35.8	458	48.8
1984	1,003,065	35.6	967	494,881	36.0	477	49.3
1983	978,208	35.7	951	482,922	36.1	470	49.3
1982	1,025,107	35.8	1,005	506,355	36.2	497	49.3
1981	1,159,566	35.8	1,148	557,533	35.9	552	48.0
1980	1,227,993	36.2	1,227	573,546	36.3	573	46.7
1979	1,238,294	36.4	1,277	555,113	36.5	572	44.8
1978	1,208,669	36.5	1,255	502,380	36.4	521	41.5
1977	1,129,628	36.4	1,181	471,103	36.3	492	41.7
Female							
1994	346,319	34.0	305	103,579	35.2	91	29.9
1993	334,397	34.1	297	106,676	34.8	95	31.9
1992	326,300	33.9	293	110,685	34.9	99	33.9
1991	348,423	34.5	316	119,760	35.4	109	34.4
1990	368,300	34.1	338	134,199	35.3	123	36.4
1989	391,727	34.7	360	139,960	35.6	129	35.7
1988	395,517	35.0	366	147,453	35.9	136	37.3
1987	388,780	35.1	363	156,042	36.1	146	40.1
1986	375,095	35.4	353	150,375	36.8	141	40.0
1985	363,186	35.0	344	135,518	36.0	128	37.3
1984	362,792	35.0	346	143,108	36.4	137	39.4
1983	350,309	35.2	337	135,134	36.4	130	38.5
1982	354,195	35.8	343	140,526	37.0	136	39.6
1981	391,625	35.7	383	153,345	36.5	150	39.1
1980	415,668	36.1	410	163,612	36.9	161	39.3
1979	414,511	36.4	421	152,996	37.1	155	36.9
1978	420,690	36.7	430	139,372	37.4	142	33.1
1977	404,133	36.6	416	134,712	37.0	139	33.3

¹ Number of YPLL per 100,000 population under age 65.

² Number of alcohol-related YPLL expressed as a percent of all YPLL.

Table 4. Alcohol-related traffic crash fatalities, according to age, United States, 1977–94.

Year	Age													
	Under 16		16-24		25-44		45-64		Over 64		Unknown		All ages	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1994.....	606	4.4	4,108	30.0	6,316	46.1	1,927	14.1	724	5.3	12	0.1	13,693	100.0
1993.....	591	4.2	4,286	30.1	6,675	46.9	1,936	13.6	705	5.0	32	0.2	14,225	100.0
1992.....	602	4.1	4,463	30.4	6,854	46.7	1,951	13.3	792	5.4	22	0.2	14,684	100.0
1991.....	595	3.7	5,363	33.0	7,474	46.1	1,951	12.0	813	5.0	35	0.2	16,231	100.0
1990.....	711	3.9	5,897	32.3	8,530	46.7	2,284	12.5	832	4.6	25	0.1	18,279	100.0
1989.....	717	3.9	6,019	32.8	8,360	45.5	2,341	12.7	908	4.9	36	0.2	18,381	100.0
1988.....	789	4.1	6,974	36.1	8,371	43.4	2,274	11.8	865	4.5	30	0.2	19,303	100.0
1987.....	829	4.2	7,027	35.3	8,766	44.0	2,313	11.6	940	4.7	43	0.2	19,918	100.0
1986.....	842	4.2	7,685	38.4	8,372	41.8	2,202	11.0	864	4.3	73	0.4	20,038	100.0
1985.....	742	4.1	6,823	37.8	7,431	41.2	2,141	11.9	824	4.6	79	0.4	18,040	100.0
1984.....	727	3.9	7,359	39.6	7,427	40.0	2,176	11.7	831	4.5	64	0.3	18,584	100.0
1983.....	731	4.1	7,064	39.6	7,139	40.0	2,138	12.0	751	4.2	38	0.2	17,861	100.0
1982.....	794	4.3	7,629	41.0	7,123	38.8	2,244	12.1	768	4.1	64	0.3	18,622	100.0
1981.....	844	4.1	8,294	40.1	7,923	38.4	2,667	12.9	880	4.3	54	0.3	20,662	100.0
1980.....	955	4.5	8,941	42.4	7,637	36.2	2,676	12.7	834	4.0	71	0.3	21,114	100.0
1979.....	972	4.8	8,624	42.6	7,159	35.4	2,597	12.8	819	4.1	70	0.4	20,241	100.0
1978.....	926	5.0	7,884	42.9	6,290	34.3	2,416	13.2	773	4.2	73	0.4	18,362	100.0
1977.....	963	5.5	7,528	43.2	5,642	32.4	2,470	14.2	742	4.3	69	0.4	17,414	100.0

Table 5. Decedent's role in alcohol-related traffic crash fatalities, United States, 1977–94.

Year	Decedent's role									
	Driver		Passenger		Nonoccupant		Unknown		All	
	Number	Pct. ¹	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1994.....	9,428	39.8	3,514	33.4	751	11.7	0	0.0	13,693	33.6
1993.....	9,695	41.9	3,717	35.9	813	12.4	0	0.0	14,225	35.5
1992.....	9,986	44.2	3,901	38.2	796	12.5	1	1.2	14,684	37.4
1991.....	11,024	46.1	4,283	40.1	922	13.6	2	1.6	16,231	39.1
1990.....	12,425	48.3	4,775	42.3	1,076	14.4	3	2.8	18,279	41.0
1989.....	12,662	48.0	4,668	40.2	1,043	13.9	8	10.7	18,381	40.3
1988.....	13,156	48.3	5,041	42.7	1,096	14.0	10	5.3	19,303	41.0
1987.....	13,447	50.1	5,257	45.2	1,209	15.4	5	8.9	19,918	42.9
1986.....	13,501	50.7	5,294	46.1	1,237	15.8	6	5.6	20,038	43.5
1985.....	12,208	48.2	4,655	43.8	1,177	15.1	0	0.0	18,040	41.2
1984.....	12,484	48.8	4,780	45.2	1,252	15.7	7	6.4	18,523	41.9
1983.....	11,776	48.8	4,784	45.2	1,285	16.6	2	1.8	17,847	41.9
1982.....	12,143	49.3	5,023	46.5	1,450	17.7	6	6.7	18,622	42.6
1981.....	13,723	48.7	5,455	45.3	1,477	16.6	7	4.1	20,662	41.9
1980.....	13,851	48.1	5,746	44.3	1,509	16.5	8	5.8	21,114	41.3
1979.....	13,098	45.4	5,695	43.9	1,450	15.8	2	2.0	20,245	39.6
1978.....	11,773	41.6	5,273	40.2	1,316	15.0	0	0.0	18,362	36.5
1977.....	11,064	42.4	5,076	39.6	1,271	14.6	3	2.8	17,414	36.5

¹ Indicates the percentage of alcohol-involvement among decedents in the role-category.

Table 6. Drivers involved in fatal traffic crashes, according to sex and alcohol involvement, United States, 1977–94.

Year	Sex											
	Male			Female			Unknown			Both sexes		
	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent
1994.....	40,233	10,695	26.6	13,567	1,822	13.4	749	3	0.4	54,549	12,520	23.0
1993.....	39,514	11,098	28.1	13,064	1,927	14.8	765	6	0.8	53,343	13,031	24.4
1992.....	38,598	11,533	29.9	12,596	1,982	15.7	707	12	1.7	51,901	13,527	26.1
1991.....	40,680	12,845	31.6	12,806	2,077	16.2	837	9	1.1	54,323	14,931	27.5
1990.....	44,281	14,618	33.0	13,726	2,309	16.8	886	9	1.0	58,893	16,939	28.8
1989.....	45,420	14,555	32.1	14,044	2,401	17.1	925	9	1.0	60,398	16,965	28.1
1988.....	47,402	15,529	32.8	13,951	2,384	17.1	900	7	0.8	62,253	17,920	28.8
1987.....	46,882	15,926	34.0	13,604	2,590	19.0	940	8	0.8	61,434	18,524	30.2
1986.....	46,648	16,193	34.7	12,744	2,315	18.2	939	9	1.0	60,331	18,517	30.7
1985.....	44,846	14,496	32.3	12,142	2,223	18.3	895	6	0.7	57,883	16,725	28.9
1984.....	44,704	14,946	33.4	11,901	2,273	19.1	893	6	0.7	57,498	17,225	30.0
1983.....	42,807	14,440	33.8	10,957	2,040	18.6	885	3	0.0	54,649	16,483	30.2
1982.....	44,165	15,090	34.2	10,628	2,042	19.2	976	5	0.5	55,769	17,137	30.7
1981.....	50,272	16,947	33.7	11,488	2,297	20.0	360	2	0.6	62,120	19,246	31.0
1980.....	51,451	17,141	33.3	11,460	2,236	19.5	28	3	10.7	62,939	19,380	30.8
1979.....	52,780	16,540	31.3	11,407	1,908	16.7	39	2	5.1	64,226	18,450	28.7
1978.....	52,235	15,019	28.8	11,337	1,694	14.9	26	1	3.9	63,598	16,714	26.3
1977.....	48,951	14,199	29.0	10,858	1,628	15.0	23	0	0.0	59,832	15,827	26.5

Table 7. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to State and injury severity, United States, 1977 and 1994.

State	Drivers given BAC tests											
	1977						1994					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	10,891	41.8	3,567	10.6	14,458	24.2	17,022	71.9	7,487	24.3	24,509	44.9
Alabama	7	1.1	6	0.8	13	0.9	246	35.6	59	7.9	305	21.1
Alaska	49	69.0	37	35.6	86	49.1	30	75.0	34	64.2	64	68.8
Arizona	164	39.9	97	15.0	261	24.7	248	55.5	72	9.8	320	27.1
Arkansas	34	10.5	17	4.5	51	7.3	257	66.2	143	33.6	400	49.1
California	2,286	86.7	681	19.2	2,967	47.9	1,927	90.3	775	21.9	2,702	47.6
Colorado	344	88.2	252	58.2	596	72.4	331	90.9	187	44.0	518	65.7
Connecticut	155	63.8	50	14.3	205	34.5	131	80.9	35	14.4	166	41.0
Delaware	44	75.9	66	68.0	110	71.0	57	85.1	65	66.3	122	73.9
District of Columbia	13	72.2	14	24.1	27	35.5	0	0.0	12	20.7	12	14.5
Florida	441	44.4	263	16.8	704	27.5	858	62.6	417	17.5	1,275	33.9
Georgia	192	24.2	110	12.0	302	17.6	688	76.6	771	69.3	1,459	72.6
Hawaii	69	88.5	5	4.4	74	38.7	62	98.4	28	33.3	90	61.2
Idaho	96	56.1	34	19.3	130	37.5	66	44.0	27	16.8	93	29.9
Illinois	689	58.1	35	2.2	724	26.1	822	87.0	93	7.9	915	43.2
Indiana	5	0.7	10	1.2	15	0.9	465	74.2	356	50.2	821	61.5
Iowa	142	35.5	31	8.1	173	22.1	187	60.9	119	33.0	306	45.8
Kansas	68	20.2	36	10.0	104	14.9	173	59.5	106	39.7	279	50.0
Kentucky	297	56.7	98	15.8	395	34.6	315	60.9	188	34.8	503	47.6
Louisiana	193	35.9	207	29.0	400	32.0	366	73.9	381	64.5	747	68.8
Maine	69	59.0	15	11.0	84	33.2	115	93.5	62	50.4	177	72.0
Maryland	160	48.2	7	1.5	167	21.1	263	74.7	39	6.8	302	32.7
Massachusetts	93	27.1	17	3.1	110	12.4	227	87.0	6	1.8	233	39.5
Michigan	619	58.9	192	12.5	811	31.3	620	72.7	352	29.9	972	47.9
Minnesota	232	50.2	51	8.9	283	27.3	308	81.5	109	22.9	417	48.8
Mississippi	4	1.1	11	2.7	15	1.9	341	68.1	157	29.4	498	48.1

Table 7. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to State and injury severity, United States, 1977 and 1994. (Continued)

State	Drivers given BAC tests											
	1977						1994					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Missouri	155	22.7	26	3.3	181	12.3	530	75.7	72	9.8	602	41.9
Montana	102	59.7	6	3.7	108	32.3	111	84.7	75	64.7	186	75.3
Nebraska	140	67.6	116	50.2	256	58.5	128	76.7	140	76.1	268	76.4
Nevada	115	81.6	51	35.7	166	58.5	132	81.5	76	36.5	208	56.2
New Hampshire	76	88.4	27	25.7	103	53.9	58	75.3	24	34.3	82	55.8
New Jersey	427	79.7	143	16.7	570	41.0	321	84.5	185	29.5	506	50.3
New Mexico	0	0.0	0	0.0	0	0.0	199	86.9	40	13.3	239	45.1
New York	143	13.4	4	0.2	147	5.1	593	71.5	44	3.0	637	27.9
North Carolina	3	0.4	6	0.6	9	0.5	725	86.8	4	0.4	729	38.4
North Dakota	0	0.0	0	0.0	0	0.0	33	64.7	11	19.3	44	40.7
Ohio	302	29.4	102	7.6	404	17.0	420	49.2	167	15.9	587	30.9
Oklahoma	329	61.2	45	8.1	374	34.1	335	73.6	52	12.0	387	43.6
Oregon	322	91.0	130	28.0	452	55.3	257	92.8	132	38.5	389	62.7
Pennsylvania	518	46.6	69	4.5	587	22.2	659	74.8	208	18.0	867	42.6
Rhode Island	58	90.6	6	7.1	64	43.2	28	96.6	5	8.5	33	37.5
South Carolina	87	17.9	12	2.0	99	9.0	109	21.0	37	6.2	146	13.1
South Dakota	82	70.1	24	19.7	106	44.4	73	79.4	57	61.3	130	70.3
Tennessee	234	33.5	165	19.0	399	25.5	650	80.4	369	44.6	1,019	62.3
Texas	5	0.3	28	1.2	33	0.7	1,027	56.2	644	28.4	1,671	40.8
Utah	58	34.1	48	20.3	106	26.0	143	80.8	187	73.9	330	76.7
Vermont	24	35.8	16	22.9	40	29.2	24	53.3	11	18.3	35	33.3
Virginia	309	52.1	9	1.2	318	23.2	352	65.7	2	0.3	354	29.9
Washington	420	79.0	165	27.1	585	51.3	343	90.7	114	23.8	457	53.3
West Virginia	8	2.6	4	1.2	12	1.9	188	78.7	41	16.1	229	46.5
Wisconsin	432	84.4	5	0.8	437	38.3	409	86.3	170	33.3	579	58.8
Wyoming	77	55.4	18	12.5	95	33.6	72	81.8	27	36.5	99	61.1

¹ Blood alcohol concentration.

Table 8. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to sex, age, and injury severity, United States, 1977 and 1994.

Sex and age	Drivers given BAC tests											
	1977						1994					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Both sexes												
16-19.....	1,813	42.6	724	12.2	2,537	24.9	1,842	72.4	1,026	29.2	2,868	47.3
20-24.....	2,627	45.3	939	13.5	3,566	27.9	2,734	76.4	1,359	31.1	4,093	51.5
25-34.....	2,700	45.5	933	11.1	3,633	25.3	4,039	78.3	2,097	27.1	6,136	47.6
35-44.....	1,291	44.6	415	8.8	1,706	22.4	2,993	76.0	1,470	24.5	4,463	44.9
45+	2,374	34.8	531	7.2	2,905	20.5	5,279	64.2	1,477	18.1	6,756	41.2
Total	10,805	42.0	3,542	10.6	14,347	24.3	16,887	72.0	7,429	24.9	24,316	45.7
Male												
16-19.....	1,507	42.5	649	13.5	2,156	25.9	1,360	73.8	801	31.9	2,161	49.6
20-24.....	2,229	45.3	842	14.6	3,071	28.7	2,207	77.6	1,109	33.4	3,316	53.8
25-34.....	2,301	46.0	847	12.2	3,148	26.4	3,147	79.7	1,736	29.3	4,883	49.4
35-44.....	1,043	44.8	352	9.2	1,395	22.6	2,268	77.3	1,185	26.4	3,453	46.5
45+	1,894	35.4	454	7.7	2,348	20.9	3,773	65.3	1,202	19.5	4,975	41.6
Total	8,974	42.5	3,144	11.6	12,118	25.1	12,755	73.5	6,033	26.9	18,788	47.2
Female												
16-19.....	306	43.2	75	6.6	381	20.7	482	68.7	225	22.3	707	41.4
20-24.....	398	44.9	97	8.2	495	23.9	527	71.7	250	24.0	777	43.7
25-34.....	399	43.0	86	5.8	485	20.2	892	73.9	361	20.0	1,253	41.6
35-44.....	248	44.0	63	7.0	311	21.3	725	72.2	285	18.8	1,010	40.1
45+	480	32.6	77	5.2	557	18.8	1,506	61.5	274	13.9	1,780	40.2
Total	1,831	40.2	398	6.4	2,229	20.8	4,132	67.8	1,395	19.0	5,527	41.1

¹ Blood alcohol concentration.

Table 9. Mean BAC¹ of drivers, pedestrians, and pedalcyclists involved in fatal traffic crashes with positive blood alcohol test results, United States, 1977–94.

Year	Person's role in crash											
	Driver			Pedestrian			Pedalcyclist			Total		
	Number	Mean	S.D. ²	Number	Mean	S.D.	Number	Mean	S.D.	Number	Mean	S.D.
1994.....	10,144	0.17	0.09	1,540	0.20	0.10	99	0.18	0.10	11,783	0.17	0.09
1993.....	10,188	0.17	0.08	1,508	0.21	0.10	111	0.17	0.10	11,807	0.17	0.09
1992.....	10,978	0.17	0.08	1,637	0.20	0.10	105	0.16	0.10	12,720	0.17	0.09
1991.....	12,129	0.17	0.08	1,678	0.20	0.10	133	0.16	0.10	13,940	0.17	0.09
1990.....	13,639	0.17	0.08	1,919	0.20	0.10	121	0.16	0.09	15,679	0.17	0.09
1989.....	13,644	0.16	0.08	2,006	0.20	0.10	99	0.15	0.09	15,749	0.17	0.09
1988.....	14,257	0.16	0.08	1,985	0.20	0.10	102	0.17	0.10	16,419	0.17	0.09
1987.....	14,344	0.16	0.08	1,958	0.20	0.10	117	0.14	0.10	16,419	0.17	0.09
1986.....	14,530	0.16	0.08	2,013	0.19	0.10	87	0.13	0.09	16,630	0.16	0.08
1985.....	12,771	0.16	0.08	1,932	0.19	0.10	76	0.15	0.09	14,779	0.16	0.08
1984.....	12,578	0.16	0.08	1,852	0.19	0.10	63	0.14	0.10	14,587	0.17	0.08
1983.....	11,273	0.17	0.08	1,571	0.20	0.10	51	0.13	0.09	12,895	0.17	0.08
1982.....	11,479	0.17	0.08	1,697	0.20	0.10	54	0.13	0.08	13,230	0.17	0.08
1981.....	12,191	0.17	0.08	1,598	0.19	0.10	41	0.15	0.12	13,830	0.17	0.08
1980.....	12,310	0.16	0.08	1,546	0.19	0.10	41	0.16	0.09	13,897	0.17	0.08
1979.....	11,212	0.16	0.08	1,451	0.19	0.10	36	0.13	0.08	12,699	0.17	0.08
1978.....	9,944	0.16	0.08	1,304	0.19	0.09	30	0.11	0.10	11,278	0.16	0.08
1977.....	9,080	0.16	0.08	1,202	0.19	0.09	29	0.12	0.08	10,311	0.17	0.08

¹ Blood alcohol concentration.

² Standard deviation.

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to age, United States, 1977–94.

Year and age	BAC level ³						
	0.02	0.07	0.12	0.17	0.22	0.27	0.30+
1994							
16-19	17.1	20.9	28.0	19.5	9.0	3.6	1.9
20-24	8.7	16.1	23.5	25.3	16.3	7.2	2.9
25-34	7.2	11.5	17.5	24.7	20.9	12.4	5.8
35-44	6.7	9.1	15.3	21.8	21.1	16.2	9.8
45+	10.6	10.8	15.1	18.8	21.2	13.6	10.0
1993							
16-19	15.3	19.2	28.0	22.3	9.7	3.9	1.7
20-24	6.9	14.1	25.4	25.3	19.0	7.0	2.3
25-34	6.8	12.1	18.7	23.3	21.9	11.1	6.1
35-44	7.3	10.0	14.9	20.9	24.0	14.0	9.0
45+	11.2	11.1	16.5	19.6	17.8	13.5	10.5
1992							
16-19	13.0	21.2	25.9	23.7	10.3	4.7	1.2
20-24	9.6	15.1	22.5	26.0	17.2	7.1	2.6
25-34	6.2	10.9	18.0	25.4	21.1	12.3	6.1
35-44	7.6	9.4	14.7	22.9	21.9	15.2	8.3
45+	11.5	12.9	15.1	18.4	21.4	13.4	7.3
1991							
16-19	13.6	20.9	26.9	21.0	12.2	3.5	2.0
20-24	7.6	15.2	23.9	26.6	17.8	6.7	2.3
25-34	6.1	10.6	18.6	25.0	21.9	12.2	5.6
35-44	7.1	9.3	14.6	21.9	22.6	15.6	9.0
45+	11.8	11.1	14.6	20.4	19.6	12.9	9.6
1990							
16-19	13.5	20.1	26.9	22.9	11.8	3.7	1.2
20-24	8.8	13.4	24.2	25.4	17.4	8.0	2.9
25-34	6.7	11.1	17.7	24.4	22.8	11.9	5.5
35-44	7.3	9.3	16.3	23.2	20.9	13.7	9.3
45+	12.6	11.4	14.4	20.1	19.8	12.2	9.4
1989							
16-19	13.8	21.7	25.1	22.4	13.0	3.0	1.1
20-24	7.9	14.9	24.1	25.1	18.0	7.3	2.7
25-34	7.2	11.0	17.9	24.1	21.9	12.2	5.8
35-44	6.6	9.5	16.6	21.6	22.3	14.4	9.1
45+	11.6	10.5	14.7	20.8	21.5	12.4	8.6
1988							
16-19	15.0	21.2	26.2	20.5	11.7	3.9	1.5
20-24	8.8	14.5	23.6	25.6	17.8	6.7	3.1
25-34	6.8	10.8	17.4	24.5	22.3	12.6	5.7
35-44	7.3	8.6	15.8	22.8	23.3	13.7	8.5
45+	12.0	11.0	14.9	18.6	21.0	13.2	9.4
1987							
16-19	14.4	22.4	25.2	23.3	10.8	2.4	1.6
20-24	8.9	16.0	24.2	25.5	17.0	6.1	2.4
25-34	6.8	11.5	17.3	24.8	22.1	12.0	5.5
35-44	7.2	8.8	15.7	24.0	20.8	14.2	9.3
45+	12.9	10.1	14.7	20.1	20.2	12.9	9.2
1986							
16-19	12.7	22.3	28.1	21.9	10.1	3.6	1.3
20-24	8.8	14.9	22.6	26.5	17.4	7.6	2.3
25-34	6.9	11.2	18.4	25.3	21.5	11.3	5.4
35-44	6.7	10.2	16.6	22.2	22.7	13.1	8.5
45+	14.6	11.4	15.1	18.9	18.8	12.2	9.0
1985							
16-19	14.3	20.0	26.9	22.5	12.0	3.2	1.1
20-24	7.8	14.6	23.5	27.6	16.8	7.0	2.7
25-34	7.0	11.1	19.2	25.1	20.9	11.2	5.6
35-44	7.0	9.9	16.1	22.6	22.4	13.4	8.7
45+	12.8	10.5	15.2	20.8	19.1	12.8	8.8

Table 11. Drivers with positive BAC¹ results of 0.10 g/dl percent or more, according to sex and age, United States, 1977–94.

Sex and year	Age											
	16-19		20-24		25-34		35-44		Over 45		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Both sexes												
1994	565	62.0	1,616	75.2	2,701	81.3	1,733	84.2	1,311	78.6	7,926	78.4
1993	590	65.5	1,728	79.0	2,771	81.1	1,729	82.7	1,208	77.7	8,026	79.1
1992	650	65.9	1,796	75.4	3,130	82.9	1,782	83.1	1,246	75.6	8,604	78.7
1991	810	65.5	2,123	77.2	3,537	83.2	1,834	83.6	1,276	77.1	9,580	79.3
1990	961	66.4	2,323	77.8	4,027	82.2	2,046	83.4	1,374	76.0	10,731	79.0
1989	984	64.6	2,399	77.2	3,600	81.6	2,237	84.0	1,478	77.9	10,698	78.6
1988	1,077	63.7	2,708	76.8	3,746	82.5	2,203	83.7	1,404	77.0	11,138	78.4
1987	1,081	63.3	2,642	75.2	4,159	81.7	1,880	84.0	1,340	77.0	11,102	77.7
1986	1,237	65.0	2,932	76.3	4,027	81.8	1,694	83.1	1,306	74.0	11,196	77.4
1985	1,024	65.7	2,699	77.6	3,468	82.0	1,547	83.1	1,231	76.7	9,959	78.3
1984	1,104	65.8	2,703	76.5	3,324	81.9	1,476	83.8	1,240	77.7	9,847	78.0
1983	1,076	70.6	2,422	78.8	3,016	83.3	1,371	85.6	1,130	79.5	9,015	80.2
1982	1,216	72.1	2,487	79.1	2,995	83.5	1,269	83.4	1,185	78.6	9,152	80.0
1981	1,302	71.4	2,608	78.6	3,156	83.1	1,360	85.6	1,295	79.5	9,721	80.0
1980	1,424	70.4	2,576	76.8	3,089	83.4	1,273	85.8	1,395	82.6	9,757	79.6
1979	1,291	66.5	2,415	79.0	2,739	83.8	1,158	84.2	1,263	83.0	8,866	79.4
1978	1,117	66.9	2,078	77.4	2,370	83.4	1,061	83.8	1,172	81.3	7,798	78.7
1977	1,049	67.9	1,918	76.6	2,089	83.1	910	84.3	1,144	82.3	7,110	78.7
Male												
1994	484	62.9	1,434	75.9	2,287	81.4	1,447	84.9	1,158	79.3	6,810	78.9
1993	519	66.5	1,538	79.6	2,319	81.1	1,463	83.2	1,075	78.9	6,914	79.5
1992	562	66.7	1,580	76.6	2,663	83.5	1,510	84.6	1,093	76.9	7,408	79.3
1991	703	67.1	1,864	77.8	3,031	83.3	1,593	84.6	1,135	78.2	8,326	79.9
1990	848	68.2	2,046	78.5	3,843	82.2	1,797	84.2	1,209	77.0	9,383	79.6
1989	843	65.7	2,117	77.2	3,079	82.0	1,940	84.4	1,296	78.6	9,275	79.1
1988	921	63.9	2,399	76.7	3,240	82.6	1,926	84.5	1,247	78.5	9,733	78.8
1987	927	63.6	2,304	75.0	3,629	82.0	1,629	84.9	1,180	78.0	9,669	78.1
1986	1,068	66.1	2,577	76.3	3,570	82.2	1,503	83.8	1,156	74.9	9,874	77.9
1985	887	66.2	2,369	77.9	3,086	82.9	1,338	83.8	1,082	78.1	8,752	79.1
1984	962	67.1	2,350	76.6	2,926	82.3	1,272	84.2	1,087	78.3	8,597	78.5
1983	921	70.7	2,147	78.9	2,679	83.3	1,188	85.7	999	79.7	7,934	80.3
1982	1,059	72.6	2,212	79.3	2,679	83.8	1,095	84.3	1,049	79.7	8,094	80.4
1981	1,107	71.7	2,317	78.7	2,829	83.5	1,180	85.9	1,170	80.8	8,603	80.4
1980	1,255	70.4	2,288	76.8	2,773	83.6	1,101	85.4	1,212	82.2	8,629	79.6
1979	1,144	67.3	2,162	79.1	2,484	84.1	1,024	84.4	1,132	83.2	7,946	79.8
1978	994	67.0	1,871	77.3	2,160	83.9	952	84.1	1,045	81.8	7,022	79.0
1977	928	68.3	1,724	76.9	1,890	83.2	800	86.3	1,013	83.2	6,355	79.3

Table 11. Drivers with positive BAC¹ results of 0.10 g/dl percent or more, according to sex and age, United States, 1977–94. (Continued)

Sex and year	Age											
	16-19		20-24		25-34		35-44		Over 45		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Female												
1994	81	57.0	182	70.3	414	80.9	286	81.0	153	73.6	1,116	75.7
1993	71	58.7	190	74.8	452	80.9	266	80.1	133	69.6	1,112	76.3
1992	88	61.1	216	67.5	467	80.1	272	84.2	153	67.7	1,196	74.9
1991	107	56.6	259	73.4	506	83.2	241	77.5	141	68.8	1,254	75.3
1990	113	55.4	274	72.7	544	81.9	249	78.1	165	69.9	1,345	74.7
1989	141	58.5	282	77.1	520	79.2	297	82.0	182	82.0	1,422	75.8
1988	156	62.6	309	77.3	506	81.7	277	78.5	157	66.8	1,405	75.7
1987	154	61.1	338	76.6	530	79.5	251	78.7	160	70.2	1,433	75.1
1986	169	58.9	355	76.3	457	79.2	191	78.3	150	67.6	1,322	73.7
1985	137	62.6	330	75.5	382	75.2	209	79.2	149	67.7	1,207	73.2
1984	142	58.2	353	75.9	398	79.6	204	81.3	153	73.9	1,250	75.0
1983	155	69.8	275	78.1	337	83.6	183	85.5	131	78.4	1,081	79.6
1982	157	68.9	275	77.9	316	81.2	174	78.4	136	71.2	1,058	76.5
1981	195	69.9	291	77.8	327	80.0	180	83.3	125	69.8	1,118	76.7
1980	169	70.4	288	77.0	316	81.0	172	88.7	183	85.5	1,128	79.9
1979	147	61.5	253	78.3	255	80.4	134	82.2	131	81.4	920	76.5
1978	123	65.8	207	77.8	210	78.4	109	81.3	127	77.4	776	76.2
1977	121	65.1	194	73.8	199	81.9	110	71.9	131	76.2	755	74.2

¹ Blood alcohol concentration.

Table 12. Alcohol-related traffic crash fatalities associated with drivers ages 16 to 24, according to decedent's role, United States, 1977–94.

Year	Decedent's role in crash ¹							
	Driver		Passenger		Nonoccupant		All	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1994.....	2,726	61.4	1,540	34.7	172	3.9	4,438	100.0
1993.....	2,836	60.4	1,675	35.6	188	4.0	4,699	100.0
1992.....	2,942	60.4	1,722	35.3	209	4.3	4,873	100.0
1991.....	3,557	61.5	2,010	34.7	219	3.8	5,788	100.0
1990.....	3,934	61.1	2,220	34.5	285	4.4	6,441	100.0
1989.....	4,183	62.2	2,232	33.2	311	4.6	6,726	100.0
1988.....	4,759	62.4	2,556	33.5	314	4.1	7,629	100.0
1987.....	4,832	61.7	2,600	33.2	392	5.0	7,827	100.0
1986.....	5,273	62.2	2,802	33.0	403	4.7	8,483	100.0
1985.....	4,706	63.1	2,360	31.6	396	5.3	7,462	100.0
1984.....	5,075	62.4	2,636	32.4	418	5.1	8,132	100.0
1983.....	4,724	60.7	2,608	33.5	452	5.8	7,784	100.0
1982.....	5,088	60.5	2,787	33.1	531	6.3	8,409	100.0
1981.....	5,652	61.1	3,046	32.9	545	5.9	9,246	100.0
1980.....	6,047	61.0	3,319	33.5	545	5.5	9,918	100.0
1979.....	5,741	59.3	3,373	34.8	563	5.8	9,683	100.0
1978.....	5,156	59.2	3,058	35.1	490	5.7	8,704	100.0
1977.....	4,911	58.4	3,041	36.2	449	5.3	8,403	100.0

¹ There were 2, 6, 7, 3, 3, 3, 5, 3, 2, 2, and 2 cases of unknown decedent's role for the years 1977, 1979, 1980, 1981, 1982, 1984, 1986, 1987, 1989, 1990, and 1991, respectively. No cases were unknown for 1978, 1983, 1985, 1988, 1992, 1993, and 1994.

Table 13. Traffic crash fatalities among young¹ drivers and young drinking drivers, United States, 1977–94.

Year	Fatalities					
	All drivers			Drinking drivers		
	Number		Percent who are young	Number		Percent who are young
	All ages	Young		All ages	Young	
1994.....	23,691	6,125	25.9	8,453	2,373	28.1
1993.....	23,132	5,990	25.9	8,652	2,444	28.2
1992.....	22,584	5,862	26.0	8,932	2,531	28.3
1991.....	23,904	6,598	27.6	9,926	3,103	31.3
1990.....	25,750	7,220	28.0	11,190	3,402	30.4
1989.....	26,379	7,558	28.7	11,343	3,585	31.6
1988.....	27,253	8,410	30.9	11,866	4,128	34.8
1987.....	26,831	8,363	31.2	12,008	4,125	34.4
1986.....	26,629	8,712	32.7	12,018	4,532	37.7
1985.....	25,337	8,321	32.8	10,915	4,072	37.3
1984.....	25,582	8,629	33.7	11,145	4,345	39.1
1983.....	24,135	8,017	33.2	10,393	3,992	38.4
1982.....	24,617	8,512	34.6	10,655	4,254	39.9
1981.....	28,182	9,764	34.6	12,056	4,702	39.0
1980.....	28,807	10,565	36.7	12,130	5,040	41.5
1979.....	28,859	10,861	37.6	11,402	4,787	42.0
1978.....	28,283	10,819	38.3	10,221	4,262	41.7
1977.....	26,088	10,058	38.6	9,572	4,133	43.2

¹ Ages 16 to 24.